

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

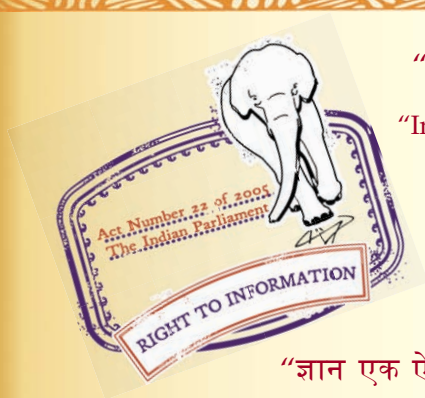
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 3858 (2006): Benzyl Acetate [PCD 18: Natural and Synthetic Fragrance Materials]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
बैन्जाइल एसिटेट — विशिष्टि
(तीसरा पुनरीक्षण)

Indian Standard
BENZYL ACETATE — SPECIFICATION
(*Third Revision*)

ICS 71.100.60

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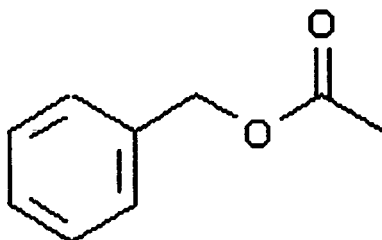
Price Group 2

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by Natural and Synthetic Fragrance Materials Sectional Committee had been approved by the Petroleum, Coal and Related Products Division Council.

This standard was first published in 1966, and was subsequently revised in 1981 and 1993. In this revision GC method of analysis for the purpose of assay has been incorporated as a regular test method. The requirement for purity has been made more stringent and the requirements for description, solubility and odour have been modified.

Benzyl acetate ($C_9H_{10}O_2$) occurs in number of floral oils, such as those of *Gardenia* spp. and *Jasminum* spp. It is one of the most extensively used perfumery materials, especially in the preparation of floral odours of *Jasmine*, *Gardenia* or *Ylang* type. It is used to some extent in flavours. It may be prepared by the interaction of benzyl chloride and sodium acetate or by acetylation of benzyl alcohol. Benzyl acetate used in flavour and fragrance should be free from chlorine and may be designated as benzyl acetate FFC (Free from Chlorine). It is represented by the following structural formula:



BENZYL ACETATE
(Molecular weight 150.18)

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

BENZYL ACETATE — SPECIFICATION

(*Third Revision*)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for benzyl acetate.

2 REFERENCES

The following standards contain provisions which through reference in the text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
326	Methods of sampling and test for natural and synthetic perfumery materials:
(Part 1) : 1984	Sampling (<i>second revision</i>)
(Part 2) : 1980	Preliminary examination of perfumery materials and samples (<i>second revision</i>)
(Part 3) : 1980	Relative density (<i>second revision</i>)
(Part 5) : 1986	Determination of refractive index (<i>second revision</i>)
(Part 6) : 2005/ ISO 875 : 1999	Determination of solubility in ethanol (<i>third revision</i>)
(Part 7) : 1980	Determination of acid value (<i>second revision</i>)
(Part 17) : 1989	Detection of chlorine (<i>second revision</i>)
(Part 19) : 1998	Gas chromatographic analysis of perfumery materials
1070 : 1992	Reagent grade water — Specification (<i>third revision</i>)
2284 : 1988	Method for olfactory assessment of natural and synthetic perfumery materials (<i>first revision</i>)
6597 : 2001	Glossary of terms relating to fragrance and flavour industry (<i>second revision</i>)

3 TERMINOLOGY

For the purpose of this standard, definitions given in IS 6597 shall apply.

4 REQUIREMENTS

4.1 Description

The material shall be a synthetic product, clear and colourless liquid, free from sediment, suspended matter and adulterants, when examined as prescribed in IS 326 (Part 2).

4.2 Solubility

The material of all grades shall be soluble in three volumes of ethanol (70 percent by volume) when tested as prescribed in IS 326 (Part 6).

4.3 The material shall also comply with the requirements given in Table 1.

5 PACKING AND MARKING

5.1 Packing

The material shall be supplied in airtight and preferably amber-coloured glass, aluminium or any other suitable container, permitting a minimum of air space, as agreed to between the purchaser and the supplier.

5.1.1 The material shall be protected from light and stored in a cool and dry place.

5.2 Marking

Each container so packed shall bear legibly the following information:

- a) Name of the material;
- b) Name of the manufacturer;
- c) Batch number and date of manufacture;
- d) Net and gross weight; and
- e) Flash point.

5.2.1 BIS Certification Marking

The containers may also be marked with the Standard Mark.

5.2.1.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturer or producers may be obtained from the Bureau of Indian Standards.

Table 1 Requirements for Benzyl Acetate (FFC)
(Clauses 4.3 and 7.1)

Sl No. (1)	Characteristics (2)	Requirements (3)	Methods of Test, Ref to (4)
i)	Odour	Intense, floral fruity odour suggestive of Jasmine	IS 2284
ii)	Relative density ¹⁾ , at 20/20°C	1.050 4-1.053 5	IS 326 (Part 3)
iii)	Refractive index ²⁾ , at 20°C	1.498 0-1.501 0	IS 326 (Part 5)
iv)	Acid value (using 10 g sample), <i>Max</i>	1.0	IS 326 (Part 7)
v)	Freedom from chlorine	To pass the test	IS 326 (Part 17)
vi)	GC analysis, percent by mass, <i>Min</i>	99	Annex A

¹⁾ The correction factor for relative density for each degree celsius change in temperature is 0.000 64.
²⁾ The correction factor for refractive index for each degree celsius change in temperature is 0.000 38.

6 SAMPLING

6.1 Representative samples of the material shall be drawn as prescribed in IS 326 (Part 1).

6.2 Number of Tests

All the characteristics given under 4 shall be tested on the composite sample.

7 TEST METHODS

7.1 Tests shall be conducted as prescribed in col 2 of Table 1. Reference to relevant standards is given in col 4 of Table 1.

7.2 Quality and Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070) shall be employed in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities, which affect the results of analysis.

ANNEX A

[Table 1, Sl No. (vi)]

GAS CHROMATOGRAPHIC ANALYSIS FOR BENZYL ACETATE

A-1 GENERAL

The chromatographic analysis is given on capillary column. The chromatographic conditions given here are for information and guidance.

Final hold	: Nil
Carrier gas	: N ₂ – Nitrogen (10 psi)
Injector temperature	: 220°C
Detector temperature	: 290°C

A-2 PROCEDURE

A-2.1 The analysis shall be done as per IS 326 (Part 19). The typical chromatograms for benzyl acetate in capillary column with the following chromatographic conditions are shown in Fig. 1 and Fig. 2.

A-2.1.2 Capillary Column – Polar

Column	: BP-21 (30 m × 0.32 mm × 0.25 µm)
Temperature programme	: 50°C to 230°C @ 5°C/min

A-2.1.1 Capillary Column – Non-polar

Column	: PE-5 (50 m × 0.32 mm × 0.25 µm)
Temperature programme	: 100°C to 280°C @ 3°C/min
Initial hold	: 2 min

Initial hold	: 2 min
Final hold	: 2 min
Carrier gas	: N ₂ – Nitrogen (7 psi)
Injector temperature	: 220°C
Detector temperature	: 240°C

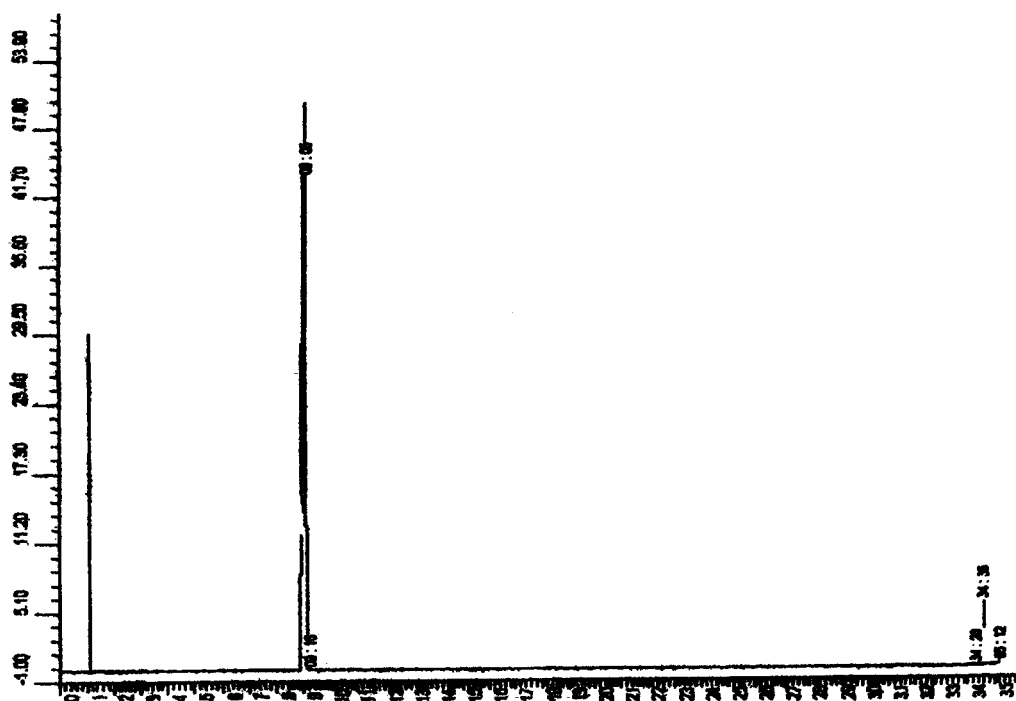


FIG. 1 BENZYL ACETATE — NON-POLAR COLUMN

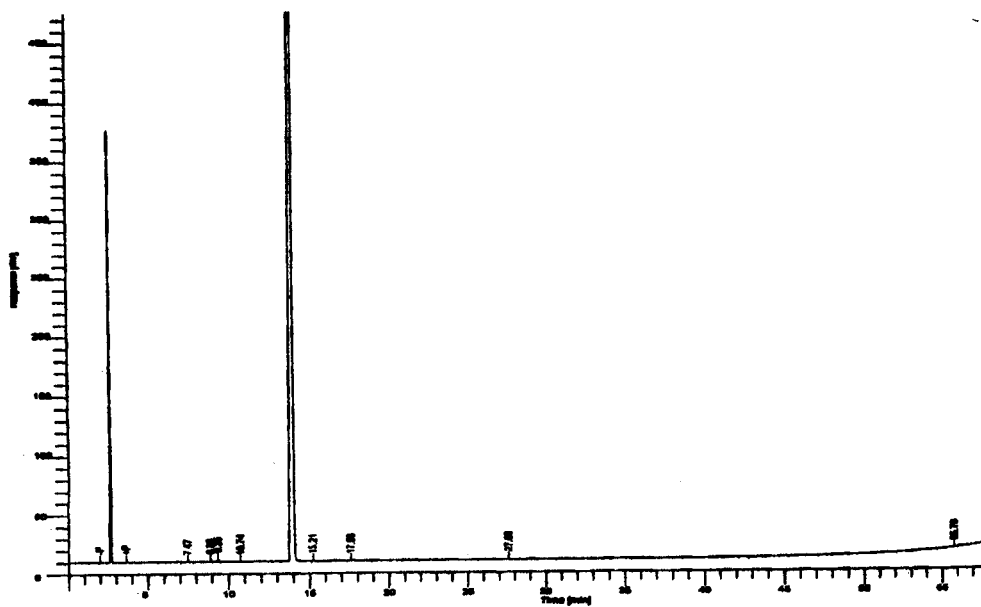


FIG. 2 BENZYL ACETATE — POLAR COLUMN

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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